

following list of stars for the detection of annual parallax. β *Hydri*, α *Phœnicis*, α *Eridani*, α *Columbæ*, η *Argûs*, δ , α^1 and α^2 , γ and β *Crucis*, ϵ , β , α^1 and α^2 *Centauri*, α *Circini*, B. A. C. 5233, β , α *Trianguli*, α *Gruis*."

Observations of α Centauri and other Double Stars made at Poona. By W. S. Jacob, Esq., late Capt. Bengal Engineers.

These consist of several measures of α *Centauri* extending over nearly three years, during which time the angle of position has increased 8° , and the distance diminished $3''$. There are observations of 6 other stars, some of which are deemed to be *probably* revolving. The author has appended elements of the orbit of α *Centauri*, a star which is known to have a very sensible parallax.

On the Annual Oscillations of the Level and Azimuthal Errors of the Greenwich and Cambridge Transit Instruments. By Mr. Henry, of the Royal Observatory, Greenwich.

On comparing the level errors of the Greenwich and Cambridge transits for every month through several years, Mr. Henry finds that there is in each instrument an annual variation of considerable regularity. The western pivot, in spring, is always higher relatively to the eastern pivot than at any other season, and lower in autumn. This maximum and minimum coincides pretty nearly with the months of March and September. As the Y adjustments of the Greenwich instrument have not been touched for eleven years (it is believed those of Cambridge have been almost as little disturbed), a tabular statement of the mean level errors for the months of March and September, during the last few years, will shew this variation very distinctly: each level error is the mean of four weekly observations: the sign + signifies that the west end is higher than the east, and — the contrary.

Transit Level Errors.

GREENWICH.				CAMBRIDGE.			
Years.	March.	Sept.	Ann ^l . Var ⁿ .		March.	Sept.	Ann ^l . Var ⁿ .
1836	+ 2.88	— 0.28	3.16	1833	— 0.86	— 3.30	2.44
7	0.54	0.93	1.47	5	+ 2.11	1.96	4.07
8	2.32	0.18	2.50	7	— 3.14	3.71	0.57
9	1.08	0.61	1.69	8	— 3.23	— 6.97	3.74
1840	1.64	0.49	2.13	9	+ 4.10	+ 1.78	2.32
1	2.21	0.54	2.75	1840	2.62	+ 1.68	0.94
2	3.03	— 0.16	3.19	1	+ 0.49	— 3.12	3.61
3	2.42	+ 0.93	1.49	1842	— 3.18	— 5.35	2.17
4	3.78	— 0.16	3.94				—
1845	+ 2.76	— 0.39	3.15				
Mean 2.55				Mean 2.48			

Thus it appears that both instruments give nearly the same value for the extent of the variation.

Mr. Henry suggests, as a query, whether this annual fluctuation can be attributed to some annual change in the spirit level. This is not likely: first, because we cannot well see how any change in the zero of this instrument should affect reversed results; and, secondly, because any change of scale, if arising from temperature, could scarcely be so consistent in its indications, and, moreover, could not well affect *mean* temperatures so sensibly while imperceptible at *extreme* temperatures. The cause is not obvious, nor is it quite certain, as yet, that the phenomenon is of universal occurrence.

There is a change of similar nature in the azimuthal errors of both instruments, as will be seen from the tabular statement below. The sign + means, that the telescope points to the east of south, or that the west pier and pivot are too much to the south.

Transit Azimuthal Errors.

GREENWICH.				CAMBRIDGE.			
Years.	March.	Sept.	Ann'l. Var ⁿ .	March.	Sept.	Ann'l. Var ⁿ .	
1841	+ 3'22	+ 2'80	0'42	1836	+ 11'10	+ 7'30	3'80
2	4'63	2'53	2'10	1840	0'72	—0'70	1'42
3	5'02	2'55	2'47	1	4'77	+ 1'33	3'44
4	5'73	3'09	2'64	1842	+ 3'27	+ 3'09	0'18
1845	+ 2'92	+ 1'53	1'39				—
Mean 1'80				Mean 2'21			

It seems pretty certain, from the foregoing tables, that the western Y, in both the Greenwich and Cambridge transits, is about 2''·5 higher at the vernal than at the autumnal equinox, and that it is also about 2'' more to the south at the first than at the second season.

On the Interior Satellites of Uranus. By the Rev. W. R. Dawes.

In the *Monthly Notices* for January last were printed some observations of an interior satellite of *Uranus*, which had been made in the autumn of last year by Mr. Lassell and M. Otto Struve. The results are, in several respects, interesting and remarkable. The fact, that one observer always saw the close satellite on the *northern* side of the planet only, while the other as uniformly observed it only on the southern side, is sufficiently curious to invite further investigation.

It is however obvious, that the observations at Starfield and at Poulkova are utterly incompatible with each other. While the latter point to an approximate period of 3^d 22^h 10^m, the period indicated by the former is only about 2^d 2^h 43^m·6. The *distance*